

# MILLION SOLAR ROOFS CASE STUDY



## Overcoming Net Metering and Interconnection Objections New Jersey MSR Partnership

### Problem: Utility Concerns over Net Metering and Interconnection

New Jersey has had net metering since 1999, when the Electric Discount and Energy Competition Act (EDECA) was signed into law. Originally, however, the New Jersey Public Utilities Commission (PUC) and the Board of Public Utilities (BPU) included provisions that resulted in higher installation costs and increased the amount of time it took to receive interconnection approval. Many of these provisions were included to ease utility concerns over safety and administration, but resulted in unintended barriers.

One of the more costly stipulations allowed utilities to require an accessible, external disconnect switch on photovoltaic systems. Utilities were concerned about solar systems transmitting power back to the grid while employees were working on a line during a power outage, compromising their safety. Therefore, the switch theoretically provided an additional layer of security. However, PV systems were already equipped with a

feature that stopped transmission to the grid in the event of a power outage. Furthermore, this additional provision from the utilities increased solar installation costs \$500–\$10,000, depending on the system size.

By 2003, it had become apparent that this concern and others may be unfounded. The PUC was willing to review their net metering and interconnection rule, however they did not have enough evidence to conclude that these provisions were unnecessary. Cassandra Kling, a leader in the New Jersey MSR Partnership (NJ MSR) and Renewable Energy Program Manager for the PUC at the time, knew there was an opportunity to overcome a key barrier to solar deployment. However, she needed to know if the objections of utilities were indeed legitimate.

### Solution: Uncovering Unnecessary Provisions

Using MSR grant funding, Kling contracted the services of Chris Cook, energy consultant and net metering and interconnection specialist, to continue his research on similar provisions in different states. Cook had been intimately involved with developing net metering and interconnection standards for the National Association of Regulatory Utility Commissioners (NARUC), the Federal Energy Regulatory Commission (FERC) and the Interstate Renewable Energy Council (IREC). Kling looked to use Cook's expertise to provide a better understanding of the pros and cons on different interconnection provisions.

Among other areas, Cook had researched PV systems across the nation that had external disconnect switches. He had looked at two primary areas: 1) frequency of use and 2) safety enhancement. After studying a number of systems and their incident rates, he found the switches were infrequently used and did not necessarily enhance safety.



U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

## What is Net Metering?

*For those consumers who have their own electricity generating units, net metering allows for the flow of electricity both to and from the customer through a single meter. With net metering, during times when the customer's generation exceeds his or her use, electricity from the customer to the utility offsets electricity consumed at another time. In effect, the customer is using the excess generation to offset electricity that would have been purchased at the retail rate. Under most state rules, residential, commercial, and industrial customers are eligible for net metering, but some states restrict eligibility to particular customer classes.<sup>1</sup>*

*For more information on net metering and interconnection laws in the U.S., visit [www.dsire.org](http://www.dsire.org) to access a complete listing.*

<sup>1</sup>[www.dsireusa.org](http://www.dsireusa.org)

First, Cook found that none of the external disconnect switches studied had been used by utility maintenance staff. Furthermore, despite their lack of use, no safety incidents had been reported. In fact, he found that the external disconnect gave linemen a false sense of security, thereby increasing the probability of human error. Therefore, following standard utility operating procedures and treating the line as live enhanced safety more so than having an external disconnect switch.

Another area Cook explored involved the amount of time it took to process interconnection applications. He found that approval processing time varied greatly between utilities. Some took weeks while others took months or did not process the application at all. If confronted with questions on an application, some utilities would not follow up with the applicant, stalling the process and

frustrating potential solar installers. In regions where the application process was longer, Cook found a disproportionate percentage of people who applied for interconnection yet did not eventually install a system.

Cook then used his experience with NARUC, FERC, IREC and New Jersey to provide testimony to the BPU. He explained the tradeoffs of certain provisions and disclosed the results of his research in hopes that the BPU would have enough information to make an informed decision.

## Results: Revised Rules that Make Solar Installations Easier

Cook's studies and testimony furnished enough proof for the commission to approve a revised net metering and interconnection rule in 2004, without many of the unnecessary provisions. As a result, New Jersey utilities can no longer require solar installers to provide an external disconnect switch. They must also process an interconnection application within one month or the application is granted approval by default.

Between 2003 and 2004, New Jersey grid-connected photovoltaic installations increased 71% from 1.1 MW to 1.9 MW. While this increase has undoubtedly been partially dependant on the maturing rebate program in the state, developing a favorable net metering law and interconnection standard has provided the legislative foundation that increased the potential capacity of this program.

By providing data to educate state energy staff on the effects of different net metering and interconnection rules, Cook and Kling were able to distinguish between legitimate and unjustifiable concerns of utilities. As honest brokers of information they played an integral role in bringing different parties together through research and made solar installations easier.

## A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

For more information, contact:  
EERE Information Center  
1-877-EERE-INF, 1-877-337-3463  
[www.eere.energy.gov](http://www.eere.energy.gov)

The National Renewable Energy Laboratory, a DOE national laboratory, produces *MSR Case Study* for:

U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
1000 Independence Ave., S.W.  
Washington, D.C. 20585

DOE/GO-102005-2192  
September 2005

Printed with a renewable-source ink on paper containing at least 50% wastepaper, including 20% postconsumer waste